We claim:

1   1. A method for antialiasing, comprising:

2   representing a set of objects with a set of two-dimensional distance fields,

3   there being one distance field for each object;

4   partitioning each two-dimensional distance field into cells;

5   associating, with each cell, a method for reconstructing the corresponding

6   two-dimensional distance field within the cell;

7   identifying, for each two-dimensional distance field in the set of two-

8   dimensional distance fields, a set of cells of the two-dimensional distance field, the

9   set of cells associated with a region of the set of objects;

10   locating a set of pixels associated with the region;

11   specifying a set of components for each pixel in the set of pixels; and

12   determining an antialiased intensity for each component of each pixel in the

13   set of pixels, the determining further comprising:

14   determining, for each two-dimensional distance field in the set of two-

15   dimensional distance fields, a corresponding distance for the component of

16   the pixel using the corresponding set of cells;

17   combining the corresponding distances to determine a combined

18   distance; and

19   mapping the combined distance to the antialiased intensity of the

20   component of the pixel.

1 2. The method of claim 1 wherein the combining performs a maximum of the

2 corresponding distances to determine the combined distance.

1 3. The method of claim 1 wherein the combining performs an arithmetic average of

2 the corresponding distances to determine the combined distance.

1 4. The method of claim 1 wherein the combining performs a union of the

2 corresponding distances to determine the combined distance.

1 5. The method of claim 1 wherein the combining performs an intersection of the

2 corresponding distances to determine the combined distance.

1 6. The method of claim 1 wherein the combining performs a difference of the

2 corresponding distances to determine the combined distance.

1 7. The method of claim 1 wherein the combining performs an implicit blend of the

2 corresponding distances to determine the combined distance.

1 8. The method of claim 1 wherein the combining performs an arithmetic operation

2 on the corresponding distances to determine the combined distance.

1 9. The method of claim 1 wherein the combining performs a conditional operation

2 on the corresponding distances to determine the combined distance.

1 10. The method of claim 1 wherein the combining uses a procedure to determine

2 the combined distance.

1   11. The method of claim 1 wherein the combining uses a table to determine the

2   combined distance.

1   12. An apparatus for antialiasing, comprising:

2   a means for representing a set of objects with a set of two-dimensional

3   distance fields, there being one distance field for each object;

4   a means for partitioning each two-dimensional distance field into cells;

5   a means for associating, with each cell, a method for reconstructing the

6   corresponding two-dimensional distance field within the cell;

7   a means for identifying, for each two-dimensional distance field in the set of

8   two-dimensional distance fields, a set of cells of the two-dimensional distance

9   field, the set of cells associated with a region of the set of objects;

10   a means for locating a set of pixels associated with the region;

11   a means for specifying a set of components for each pixel in the set of

12   pixels; and

13   a means for determining an antialiased intensity for each component of each

14   pixel in the set of pixels, the determining further comprising:

15   a means for determining, for each two-dimensional distance field in

16   the set of two-dimensional distance fields, a corresponding distance for the

17   component of the pixel using the corresponding set of cells;

18   a means for combining the corresponding distances to determine a

19   combined distance;

20   a means for mapping the combined distance to the antialiased

21   intensity of the component of the pixel; and

22   a display device for displaying the antialiased intensity of the

23   component of the pixel.

1   13. The apparatus of claim 12 wherein the display device is a CRT monitor.

1   14. The apparatus of claim 12 wherein the display device is an LCD monitor.

1   15. The apparatus of claim 12 wherein the display device is an OLED monitor.

1   16. The apparatus of claim 12 wherein the display device comprises a set of

2   components, wherein each component in the set of components is individually

3   addressable.

1   17. The apparatus of claim 12 wherein the display device is a part of a personal

2   digital assistant.

1   18. The apparatus of claim 12 wherein the display device is a part of a

2   communication device.

1   19. The apparatus of claim 12 wherein the display device is a part of a gaming

2   device.

1   20. The apparatus of claim 12 wherein the display device is a part of an appliance.

1   21. The apparatus of claim 12 wherein the display device is a part of an electronic

2   device.